

### REMARKS

Claims 1-7 are pending in the application. The examiner has rejected claims 1- 7 under 35 U.S.C. §103(a) as being unpatentable over Cornelison et al. (U.S. Patent No. 2,958,021) in view of Taijima (U.S. Patent No. 5,632,158). Applicant respectfully traverses these rejections.

In regards to the rejection of claims 1- 7 under 35 U.S.C. §103(a) as being unpatentable over Cornelison et al. in view of Taijima. Cornelison discloses a cooling arrangement where a layer 19 is attached to the wafer 10 and is soldered to an annular copper header 22, which acts as a heat sink. Col. 1, ll. 64-65. "The copper header 22 is attached to the annular plate 2 by solder and the openings 34 and 35 in plate 26 and header 22 respectively, are such that the collector side of the wafer is virtually exposed through the opening 35." Col. 2, ll. 1-4. A tube 36, having a diameter somewhat less than the opening 34, is soldered to the upper surface of the copper header 22. See Cornelison Abstract and claim 1. The tube contains a suitable fluid 42 and is sealed at its upper end by a plug 38. Col. 2, ll. 5-11.

At the meantime, Taijima discloses a cooling unit having a cold plate mounted on an electronic component, where **another surface is covered by a cover member to form a tank section in which a refrigerant is stored.** A container pipe extending from the cover member and a wick pole is fitted in the container pipe. And Taijima discloses "the other (opposite) surface of the cold plate 31 has a circular recess 31a. In addition, thin grooves 31A are formed in the bottom of the recess 31a of the cold plate 31. Furthermore, an engaging recess 31b is formed in the peripheral portion of the recess 31a, and caulking pawls 31c are formed outside the engaging recess 31b." Taijima col. 2, ll. 63-67.

Claim 1 is the only independent claim of the current invention, which contains limitations not disclosed or taught by either Cornelison or Taijima. Claim 1 of the current application reads:

1. A heat pipe, comprising:
  - a pipe member having two opposing open ends;
  - a lid closely covered on one open end;
  - a base having an interlocking member with a flange fitly embracing the pipe

member to receive the other open end of the pipe member therein, wherein a thickness of the flange is not larger than a thickness of pipe member at the open end received in the interlocking member; and  
a wick structure attached on an inner wall of the pipe member and an inside surface of the base.

(Emphases added)

The cooling arrangement of Cornelison doesn't use a wick structure nor a base with the interlocking member nor a flange connecting between the cold plate and the pipe, while the Tajima's cooling unit uses a tank structure to host the container pipe, the wick pole structure Tajima used is different from the wick structure the current application discloses, a wick structure attached the inner wall and the inside surface of the base. Moreover, the element of "a base having an interlocking member with a flange fitly embracing the pipe member to receive the other open end of the pipe member, where the thickness of the flange is not larger than the thickness of pipe member at the open end received in the interlocking member" is unique, when the base is soldered into the pipe member, it is enforced to be liquefied first and more than the pipe member does. It will prevent the pipe member being damaged during the welding process.

As stated in MPEP §2143.01:

The mere fact that references can be combined or modified do not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Also as stated in MPEP §2143.03:


All the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPO 494, 495 (CCPA 1974).

The current invention discloses a cost effective way to product a heat pipe having a reliable end surface and has several elements that are not taught or disclosed by Cornelison or Tajima or their combination. Therefore, Applicant respectfully disagrees with the Examiner's rejections.

If the Examiner believes that a further telephonic interview will facilitate allowance of the claims, he is respectfully requested to contact the undersigned at (610) 446-5886. For the reasons stated above, Applicant respectfully asserts that the pending claims are in condition for allowance. Reconsideration and allowance of the pending claims are respectfully requested.

Respectfully submitted,

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